AXMINSTER TOOL CENTRE

CL-1500
Copy Lathe

User Manual

210651

AXMINSTER WHITE

Axminster Reference No: **CL-1500**

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Content

GENERAL NOTICES

Dear Customers,

In order to use your new copying wood lathe with its full values and without problem, it is necessary to follow the following suggestions:

- When getting the machine, the completeness of the parts should be checked/see the part list /;
- After unpacking, the single parts should be checked for transport damage;
- Before erecting and starting of the machine, this user's manual should be read in detail.

We hope you have a successful work with the copying wood lathe.

1 USE OF THE MACHINE

1.1 Regulation of the machine

The machine facilitates the turning work of the semi-finished products of wood and wood base.

The machine is designed for operation only by one worker.

Any manipulation for children and youngster is forbidden.

1.2 Qualification of the worker

Only the specialist trained in wood processing or the worker who is instructed and taught by this specialist is allowed to work on the machine without consideration of sexual distinction. For the work on the machine, the operator is obliged to know this manual and to abide by all the safety regulations, arrangements and regulations which are valid in concerned countries.

1.3 Working surrounding

The machine must work in the workshop surroundings which temperature doesn't surpass +40℃ and doesn't fall under +5℃. The relative air humidity in the range of 30% to 95% - not condensing. The elevation up to 1000m. Surrounding classification – fire danger of the flammable dust.

2 PACKING LIST

No.	Name	Quantity
1.	Copying wood lathe	1
2.	Copying device	1
3.	Tailstock	1
4.	Pan	1
STANDARD ACCESSORY		
6.	Bucket Φ40	1
7.	Bow	-
8.	Faceplate	1
9.	Turning tip MT2	1
10.	Front-tip MT2	1
11.	Arbor for three-jaw chuck 16	1
12.	Three-jaw chuck 16	1
13.	Steady rest	1
TOOLS AND ACCESSORIES		
14.	Special Spanner	1
15.	Pin	1
SPECIAL ACCESSORIES		
16.	Universal flange	1

3 INFORMATION ON THE COPYING WOOD LATHE

3.1 Use of the product

The copying wood lathe is a wood processing machine, which is suitable for roughing turning and finish turning of wood products.

The machine is driven by an electric motor. The machine can operate under production conditions as well as under household conditions. The turning according to the pre-made template or the pre-made model is made possible by the copying device.

3.2 Technical description

The copying wood lathe consists of the following important elements and parts /Fig.1, Fig.2/: body /1/-the headstock/3/ and the guide – round – Φ50 and rectangular – 80 x 60 are mounted in the body /1/.

The copying device /4/ is mounted on the both guides. The copying wood lathe is fixed to the foundation by body /1/ and support /6/. The latter are equipped with four holes Φ13 for the foundation bolts.

The spindle /13/ is carried on the headstock on the bearings /11/ and /12/. The electric motor is fixed under the headstock by two consoles /15/ and /16/, what make the belt tensioning possible.

The two 4-stage pulleys /17/ and /18/ are mounted on the shaft of the electric motor and on the spindle, so that the rotation movement is transferred. The spindle rotation speeds are displayed on the front panel of the machine according to the belt setting -/7/.

The pulleys /17/ and /18/ and the belt /19/ are ensured by a door /2/.

The lathe can not work, if the door is opened. One limit switch guarantees that the door is closed.

The tool support /9/ can be fixed on the guides of the copying wood lathe, and the copying device

/3/ is displaced in advance. The displacement takes place to the right till the limit position. One pan /8/ for tool and raw piece is mounted on the lathe. The electric installation of the copying wood lathe consists of: electric panel, control desk, motor, circuit breaker and cable. The principle circuit diagram of the lathe is shown on page.

Copying device – Fig.6, 7, 8, 9

The copying device is fixed on the guides by body /34/. It is driven by the nylon-box /36/ onto the cylindrical guide/quill and is driven by the two roller bearings /32/ onto the rectangular guide .

The longitudinal movement happens by means of gear and gear rack through handle /37/.

The copying is carried out by a tool which is fixed on the tool holder /56/ with two screws M8 x 10. The tool holder is mounted onto the plunger /29/ through two bushings /60/ and /61/ and screw M8 x 35 and is ensured against rotation by means of the feather key /59/.

The plunger makes its movement in the quill /28/ over the bronze-box /31/ and is fixed in the nut of the quill through the feather key against rotation. It is necessary to make regular lubrication of the bushings by means of the pressure grease gun /35/. The plunger is pressed by spring /30/ in the top position. The plunger stroke is 50mm. The spring is adjusted by nut /27/. The bow /41/ is fixed on the low end of the plunger through bushings /39/ and /40/ and screw M8 x 35. The plate /52/ which connects the plunger to the lever is attached on the bow.

The quill /28/ is mounted in the body of the copying device and has possibility to reach the fixable stroke of 45mm. The quill is fixed through screw /46/. The bow /57/ is fixed on the low end of the quill through the two bushings /54/ and /55/ and screw M8 x 40. The cross-feed of the tool is adjusted with screw M14 x 2 /45/. The finger is made in two variant /50/ and /53/, depending on the maximal size of the curve of the wood template or metal template. The finger has an adjusting possibilities of 32mm through the plate /51/. The round template is mounted between the tips /49/ which are fixed on the two consoles /48/. The tips are mounted onto the console /47/ through screws M6 x 20 and the console is fixed on the rectangular guide at the side. The consoles have an adjustment range of 50mm.

The plane template is mounted directly onto the consoles /48/ through screw M8. The stroke of the plunge is carried out by the means of the lever /44/ manually. The fixing of the lever upward is carried out through the adjustment screw /45/. This adjustment screw is limited by the console /42/ which is fixed on the lever. The cross-copying routine is 1200mm, and when rotating the handle clockwise, the copying device moves to the front tip. For one revolution, the copying device is shifted for 113mm. The cross copying range is 50mm, and a fixed feed is made possible through screw /48/. For one revolution of the screw, a cross-feed of the tool of 1mm happens.

The copying device is used for cross-copying according to round template and plane template, and also for copying according to original piece.

3.3 Technical characteristic

No.	Parameter	Size unit	value
1.	Max. processing length	mm	1250 (CL1300) 1450 (CL1500)
2.	Max. length for cross-copying	mm	1100 (CL1300) 1300 (CL1500)
3.	Max. diameter for cross-copying	mm	120
4.	Copying depth	mm	50
5.	Distance-guide-spindle shaft	mm	210
6.	Distance-ground-turning shaft	mm	1030
7.	Spindle rotation speed	rpm	500 1000 1950 2800
8.	Outside measurement:		
	- width	mm	480
	- height	mm	1150
	- length	mm	2000 (CL1300) 2200 (CL1500)
9.	Weight	kg	218 (CL1300) 228 (CL1500)
10.	Installed power	kW	1.1

3.4 Circuit diagram

3.4.1 Electric connection(Three-phase motor)

The copying wood lathe is driven by a three-phase motor.

The power supply connection happens by means of a three-pin 16A plug to be prepared by user.

ATTENTION: The power supplying of the copying wood lathe happens by means of a three-phase switchboard with a 10A fuse.

3.4.2 Technique of the electric safety

The following protection and locking devices are planed in the copying wood lathe:

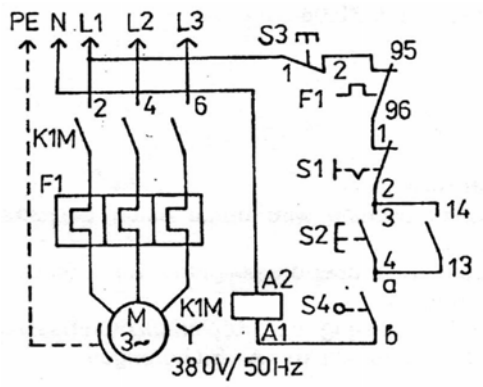
- Overload protection – bimetallic thermally-operated relay F1;
- Minimal voltage protection – K1M – Protection switch
- Locking device – when the protection cover is removed, the electric motor will not start
- Micro-circuit-breaker S4. All the electric devices are connected to the protection line of the power supply through an earthing rail.

Its earthing happens after mounting of the machine, and the earthing screw is connected to the earthing circuit of the room.

The keys “EIN”(S2) and “AUS”(S3) are used for turning on and turning off of the copying wood lathe. In case of accident the machine is to turn off through the key “NOT-AUS”(S1).

ATTENTION: All the repair works on the electric circuit of the machine must be carried out absolutely under the condition that the machine is unplugged.

Three-phase **Single-phase**



LIST OF THE ELEMENTS OF THE ELECTRIC CIRCUIT OF THE COPYING WOOD LATHE

Name	Specification in electric circuit	Quantity piece
Protection	K1M	1
Thermoelectric relay	F1	1
Circuit breaker	S4	1
Key “Stop”	S3	1
Key “Start”	S2	1
Emergency-stop switch	S1	1
Electric motor	M	1

3.5 List of the purchasing parts

No.	Name	Specification	Basic parameter	Piece
1.	belt		1250O/10x6	1
2.	bearing	6208ZZ	40x80x18	1
3.	bearing	6206ZZ	30x62x16	1
4.	bearing	6000 2RS	10x26x8	5
5.	bearing	6202 2RS	15x35x11	2
6.	part of electric circuit		according to	P.3.5

4 INFORMATION AND REQUIREMENTS ON THE WORKING PLACE

The copying wood lathe can work in any room with an air temperature over 5℃ and a relative air humidity of max. 75%.

The foundation is carried out on concrete ground without special requirements /see P.5.3/.

During operation of the copying wood lathe, wood cuttings are cut off and accumulated near the machine. In order to guarantee their exhaustion during the operation, a way to connect with a local exhaustion equipment is planned. The connection happens through a matching part which is equipped with an output pipe of diameter 100mm, which is mounted on the body of the copying device.

The machine has no influence upon the environment.

5 REQUIREMENT ON MOUNTING

5.1 Unpacking

Disposal of reserving material

After the copying wood lathe is unpacked, the reserving material is to dispose of. For this purpose, all the areas must be cleaned with threads which are a little soaked with mineral turpentine or gas oil.

5.2 Erection, mounting

5.2.1 Foundation

The machine is mounted on a plane ground. 4 holes are marked on the ground according to the holes of the body /1/ and the support /6/ respectively – Fig.1. The lathe is shifted to the side and 8 holes are drilled on the footing. The diameter depends on the type of footing - /with dowels or foundation bolts/. After checking the level, the body /1/ and support /6/ are locked to the ground.

5.2.2 Trial operation of the machine

After foundation and connection of the power supply, the copying wood lathe is tested in idle running to check if the spindle shows the correct rotation direction / seen anti-clockwise opposite the spindle /. The belt tensioning (if necessary) and the change of the rotation speed are carried out in the following order:

- Open the door /2/ - Fig.1, in which the handle is turned.
- Unscrew lightly screws /23/ and /24/ through hexagonal box spanner 8 – Fig.2.
- Draw out the handle /26/ and lift motor lightly till engagement with the cross-slot of the plate /25/ on screw /23/.
- Adjust the belt to the required position.
- Draw out the screw /23/ from the cross-slot of the plate /25/ by lifting with the handle /26/ and the belt under the motor cover is tensioned.
- Screw on screws /23/ and /24/.
- Close the door /2/ - Fig.1.

Note: The turning on of the copying wood lathe with the door opened is blocked by a circuit breaker.

5.2.3 Adjustment of the machine for operation with different accessories

The following parts are used as accessories:

a/ Turning tip- it is fixed in the quill of the tailstock.

b/ Faceplate – it is used for face turning of unsymmetrical parts.

c/ Changeable front tip – it is used for the operation with the faceplate for centering of raw piece.

d/ Steady rest – it is attached to the guides and is used for turning of parts with small diameter and big length.

e/ Universal chuck P16 – it is fixed on the tailstock through a special arbor.

5.2.4 Operation preparation of the copying device

- The play between guide and roller bearing must be checked. If necessary, adjust it through the plate /33/.
- Check the movement of the copying device completely – it must be light and free of failure.
- The plunger running in the whole range and the lever system for driving the plunger must be checked.
- Adjust quill /26/, template finger and adjustment screw /45/ depending on the processed diameter.

6 INFORMATION ON OPERATING PERSONNEL

The purpose of this user's manual is to make you familiar with the machine and its extensive possibilities, to make your work easy and to give you information on the operation regulations.

The user's manual should always be available near the machine, and it should be protected against damage and dirt. Anyone who works with the copying wood lathe should at first study all the regulations and requirements in this manual in detail. Besides the described work protection regulations, attention must be paid to the general technical regulations for work with the wood processing machine. The minimal age of the operating personnel who operate this machine is 18 years old and the age for the apprentice – not less than 16 years old. The apprentices can work only under supervision. The workers who operate the copying wood lathe must wear suitable working cloth and protection glasses. Long hairs must be inserted under cap or scarf.

Wood cuttings and wood rubbish should be regularly cleaned from working place. It is not allowed to arrange and store the things which disturb operation in the working room.

It is not allowed to operate the machine with the safety devices and protection devices removed.

7 INFORMATION ON OPERATING OF THE LATHE

7.1 Operating

7.1.1 The tool support /Fig.4/ must be attached in the maximal vicinity of the raw piece to be processed, so that the tool is carried on its guide edge stably.

7.1.2 It is recommended to use the raw pieces with a cross section which is very similar to round cross section. For square pieces, the edges must be canted in advance.

7.1.3 The tool is held a shown in Fig.4.

7.1.4 For work between the tips, the both flanks of raw piece are drilled with a center drill.

7.1.5 A peripheral speed of 25m/s is suitable for the wood processing. Pieces with big sizes are processed in low speed. When working with a faceplate, the allowed rotation speed is max. 1000 rpm.

7.1.6 It is recommended to use a steady rest for slender and long pieces /small diameter and big length/.

7.1.7 During processing of a series of pieces with complicated form, the copying device with corresponding template is used.

7.2 Starting

7.2.1 The power supply connection and eliminating of electric failures can be carried out only by qualified specialists.

7.2.2 Before starting the electric motor, it must be checked, if the tailstock, the tool support and the quill of the tailstock are tensioned.

7.2.3 Before starting the copying wood lathe, the raw piece must be rotated for one revolution per hand to check if it stays on the tool support.

7.2.4 The starting of the copying wood lathe happens by means of the key "EIN", which is marked with the symbol (black color) on the front panel.

7.3 Turning off

When operation is finished or interrupted, the machine is generally turned off by the means of the key "AUS". During carrying out of repair work, tooling and adjustment, the machine is separated from the power supply by unplugging the machine.

If the protection door for belt drive is opened, the turning of the electric motor is stopped through the micro-circuit-breaker S4 behind the spindle unit. The same circuit breaker prevents the motor

from being turned on again, in case the protection door is not closed.
When the electric motor is overloaded, it will be automatically turned off through the heat protection relay F1.

7.4 Emergency switching-off

When a danger of human wounding or machine damage appears, the red mushroom-shaped emergency switch “NOT-AUS” must be pressed immediately.

7.5 Starting after emergency switching-off

The starting after an emergency switching off happens only after eliminating of the failure which has caused this switch off. After failure elimination or after finishing of the repair work, all the protection devices must be mounted again and the protection door must be closed.
Before starting the machine, all foreign bodies, bolts and open-end wrench should be taken out.
If the electric motor is turned off through the thermally-operated relay because of overheat, its cooling is to wait.

7.6 Adjusting and controlling

Before carrying out of any adjustment, the machine is to turn off and unplug.
a/ Selection of corresponding rotation
When selecting the corresponding speed, the operator should consider the kind and the structure of the wood material, its humidity as well as the form and size of the raw piece. The low speeds should be preferred for the pieces with big diameter, long area and big length and for the raw pieces made of stuck pieces.

The change of rotation happens as following:

- The door 2 – Fig.1 is opened through rotation of the handle;
- The screws /23/ and /24/ are unscrewed through handle /26/ and the electric motor is lifted, in which the plate /25/ is locked on screw /23/;
- The belt is put on the corresponding stage.
- The electric motor is lowered through the handle /26/, after the plate /25/ is unlocked from the screw /23/;
- All the described machine parts are screwed on in the reverse order.

ATTENTION: The strong belt tensioning causes a quick wear.
When the door is closed, the adjustment stage of the machine can be seen through the corresponding holes.
b/ Tailstock - /Fig.3/
The tailstock can be fixed to different positions of the guide by screwing off and screwing on of the nut M10 /8/.
The raw piece is put on the tip of the tailstock, in which the handle /13/ is rotated until the tip is engaged in the wood.
The problem-free rotation of the raw piece is to check through rotating per hand.
c/ Tool support /9/ - Fig.1
Depending on the length of the raw piece, a short or long tool support is selected, which is attached to the guides through the bow /10/ and is screwed on through the nut M10.
The support should be set up in a distance of 1-3mm from the raw piece.
The correctness of adjustment is checked by rotating the raw piece per hand.
When processing a front area, the tool support is rotated to 90 degree, i.e. parallel to the processing area.

d/ Copying device

The necessary adjustments are described in P.5.3.4.

7.7 Danger,safety measures

It is forbidden to hold a piece or the spindle which stays in stop status. It is forbidden to measure a moving piece.

It is not allowed to process the piece with large fissures.

The tooling, adjustment and repair can be carried out only by qualified specialists who know the corresponding danger information.

The manufacturer bears no responsibility for the failures which appear because of change in construction of the machine by user himself. During turning operation, the tool is held by the both hands.

When removing the machine, it should be turned off and unplugged.

It is not allowed to connect the machine with a cable line which disturbs isolation.

7.8 Typical failures and methods for their elimination

No.	Name of failure, change and additional features	Possible causes	Elimination methods
1.	Bad quality of the processing area	tool worn out	resharpen
2.	Electric motor overloaded	too big feed	
3.	Bearing warming	belt overstressed	belt relax
4.	Power loss	belt loose	belt reclamp

7.9 Operation notices

Only the working personnel who are familiar with the operation regulations and operation protection regulations are allowed to operate the machine.

a/ Guiding of the tool

As shown in Fig.4, the tool is held with both hands, in which it is pressed to the tool support.

The correct grinding of the turning tool is important for reaching of processing area with good quality /see Fig.4/.

b/ Material selection

The wood to be processed must be massive materials free from cross fissures and knot. The danger of breaking of the defective wood exists under the effect of the acting forces. The stuck raw piece can be processed only by an experienced joiner.

c/ Preparation of material

For long pieces, the raw pieces are sawed into bars with square cross section in advance.

d/ Flank centering

Before turning, the long raw pieces must be centered by determining the center of the both flanks and drilling the center holes.

The raw pieces which are not centered cause strong vibration.

e/ Finish machining

After reaching the basic form of the work pieces and if the turning is even and without radial run-out, a higher rotation speed can be selected. Before this operation, the machine is to turn off and unplug.

7.10 Basic features of the tools

Standard tools are used for manual processing of wood.

A V-copying tool for work with the copying device is illustrated in Fig.5.

7.11 Regulations for reduction of noise and vibration

In order to reduce vibration, the copying wood lathe must be so mounted on foundation, as described in P.5.3 of the user's manual.

The error-free, well ground tools work without excessive noise.

Before turning of plane raw pieces, they should be sawed on a band saw, and the octagonal form is preferred, so the vibration is avoided.

In order to reduce unbalancing and vibration, the long raw pieces are subject to a centering /see P.7.9 d/.

8. REGULATIONS FOR MAINTENANCE AND SERVICING

8.1 Maintenance

All actions related to maintenance, servicing, cleaning or elimination of functional failures are to carry out with the machine turned off.

When any device is changed (for example, the faceplate), the thread of spindle is cleaned and lubricated. The quill of the tailstock is also regularly dismounted, cleaned and lubricated, so is the adjustment spindle.

After work, all the machine parts are cleaned. Special attention is to be paid to the plane guides and round guides.

After finishing of different tooling, maintenance, servicing and repair work, all the removed protection devices are immediately mounted again.

8.2 Inspection

The operator should check the status of the machine in regular interval (for example, monthly). The more important checks are:

- Status of plane and round guides;
- All the sign boards (turning direction, front board of the operating desk etc.) should be on their positions.
- Tool and fixture set should be complete and is to keep in orderly status without damage and deformation.
- During spindle turning, no abnormal noise is to hear.
- Special attention is to be paid to power supply circuit – there appear often isolation failures because of deformation or ageing.

8.3 Repair

When a failure or deviation from the normal status is found, the operation should be interrupted till its elimination. The defective or missing machine parts are to displace by new ones which comply with the forms and sizes of the original parts.

During connection and change of the place, the rotation direction of the electric motor is to check and if necessary to correct.

The connection and repair of the electric installation can be carried out only by electric specialists.

After all the actions related to checking and repairing are finished, all the protection devices and locking devices are turned on again (if they were removed, they will be displaced by new ones).

9 APPENDIX

Fig. 1 – Copying wood lathe – general outline(cl1300)

Fig. 2 – Spindle box

Fig. 3 – Tailstock

Fig. 4 – Application of the tools

Fig. 5 – Form and size of the tools

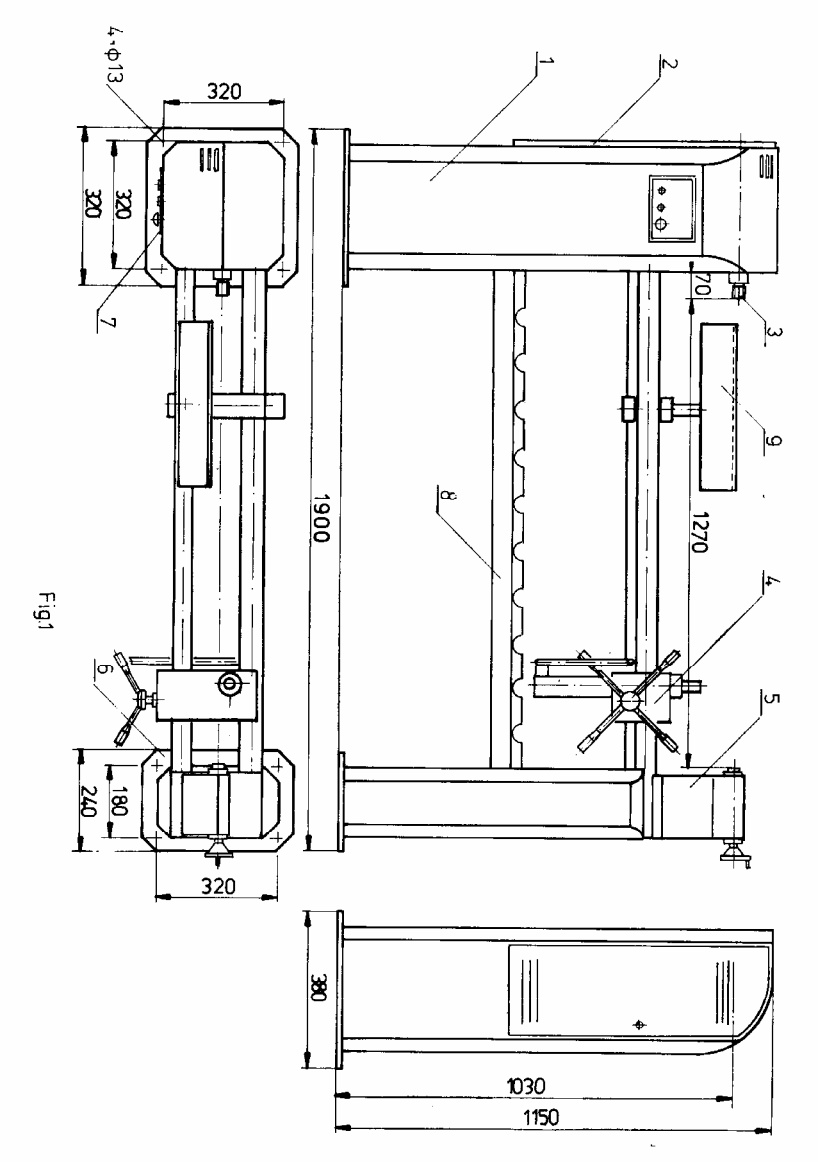
Fig. 6 – Copying device – sheet 1

Fig. 7 – Copying device – sheet 2

Fig. 8 – Copying device – sheet 3

Fig. 9 – Copying device – sheet 4

Fig. 1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320
320
1
2
7
70
3
9
8
1900
1270
4
5
6
240
180
320
380
1030
1150

Fig.1

Fig. 2

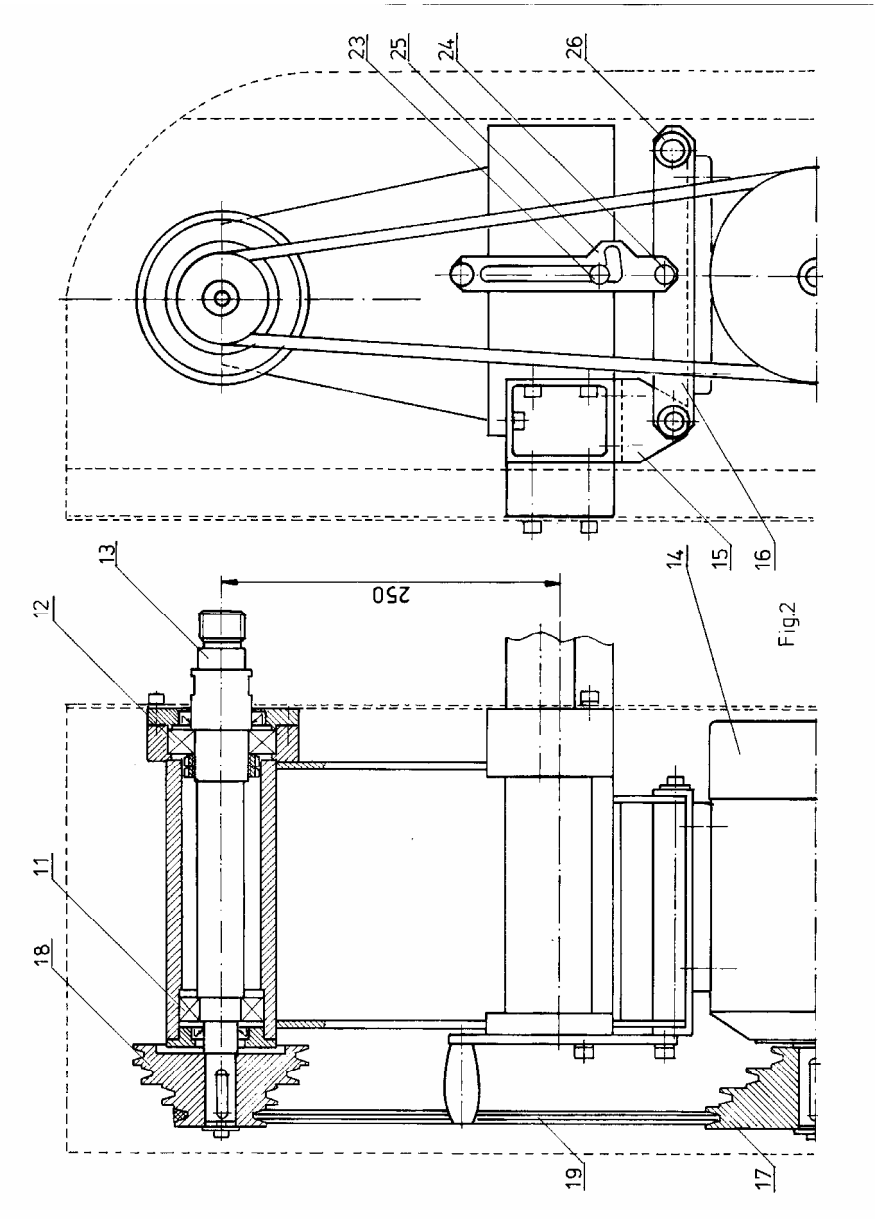


Fig. 3

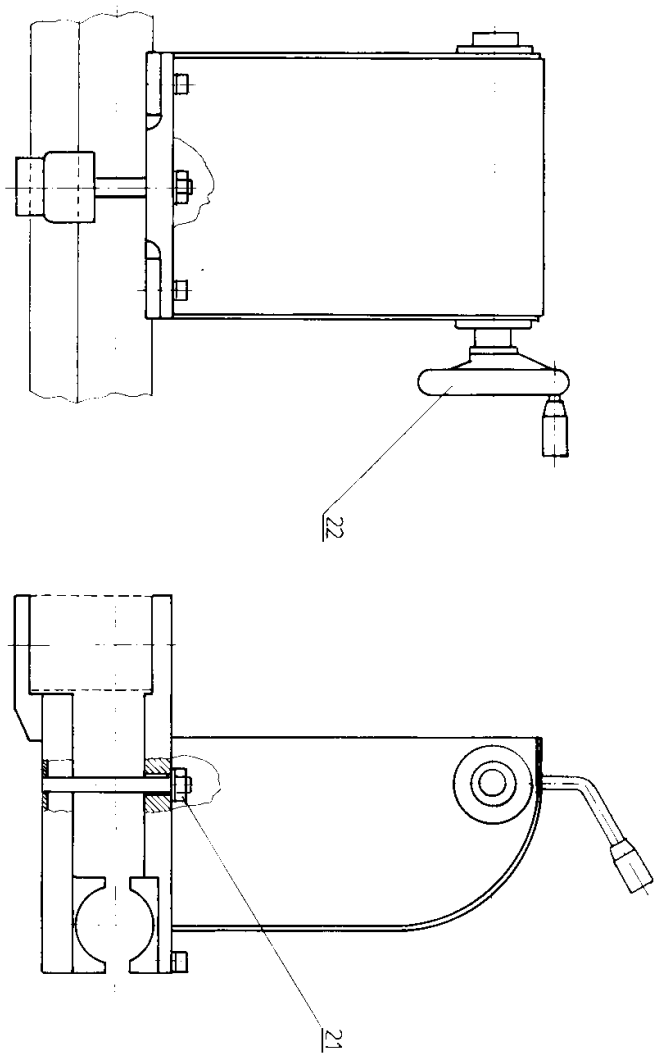


Fig.3

Fig. 4

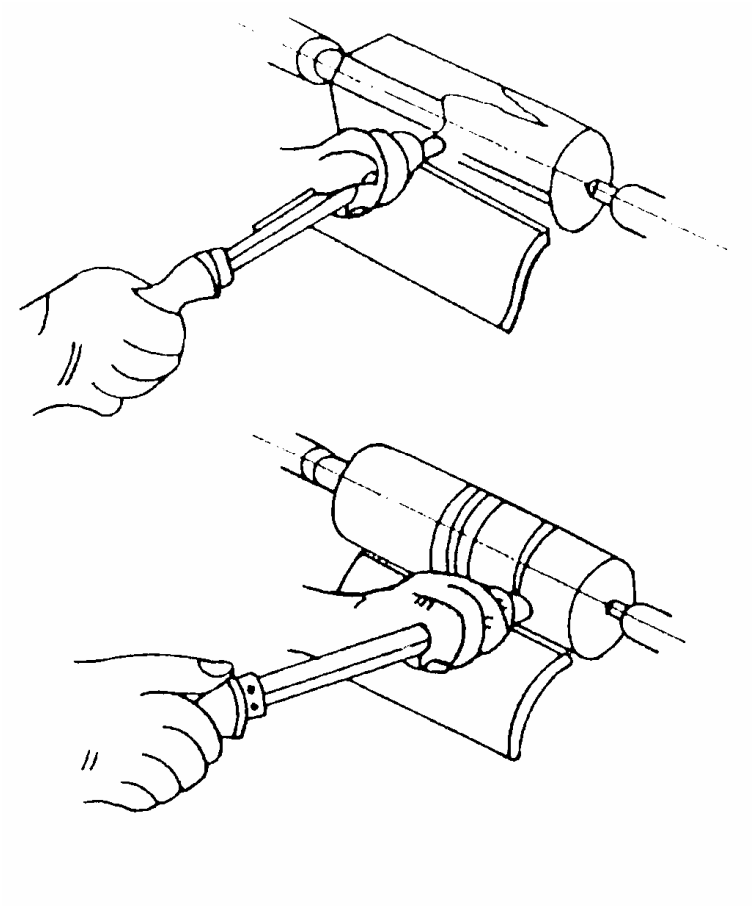


Fig. 5

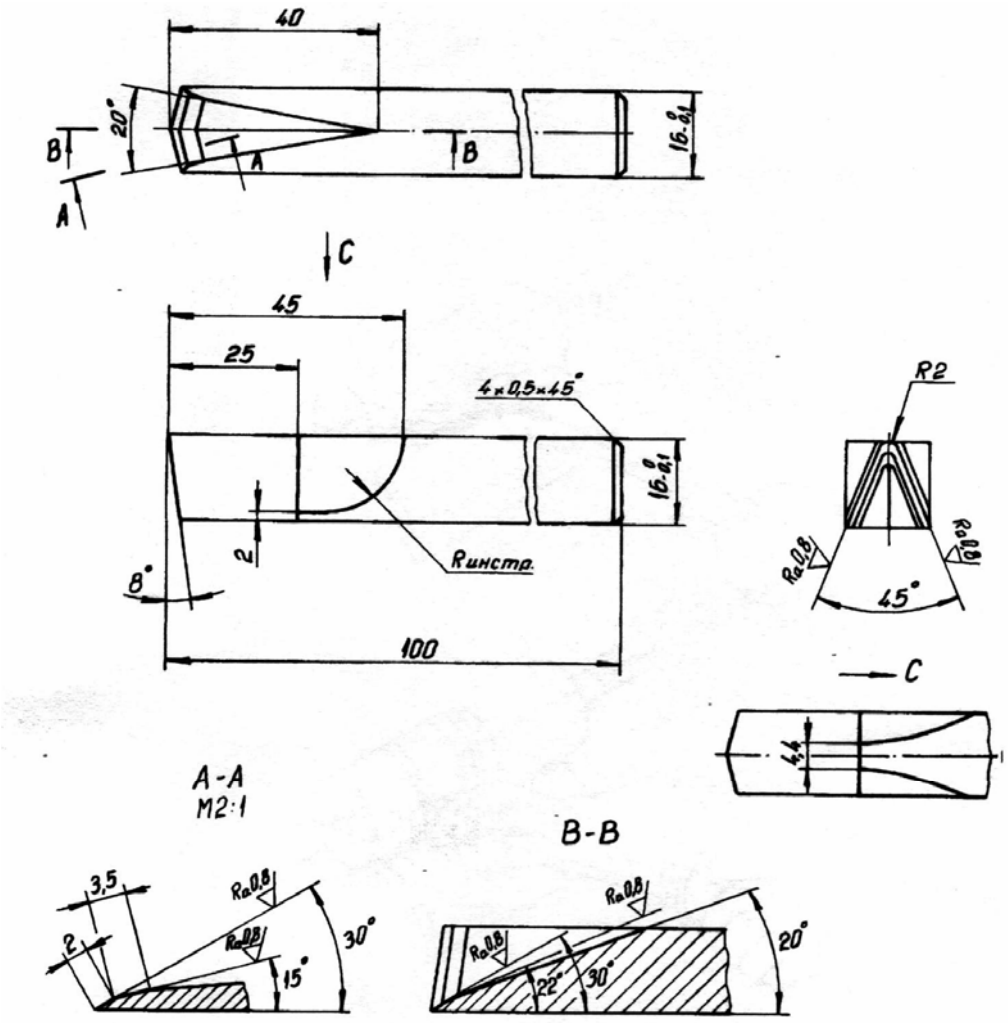

40
20°
B
A
A
B
16.81
C
45
25
4×0,5×45°
16.81
2
8°
Rинстр.
100
R2
Ra0.8
Ra0.8
45°
C
4.4
A-A
M2:1
B-B
3,5
2
Ra0.8
Ra0.8
30°
15°
Ra0.8
Ra0.8
22°
30°
20°

Fig.5

Fig. 6

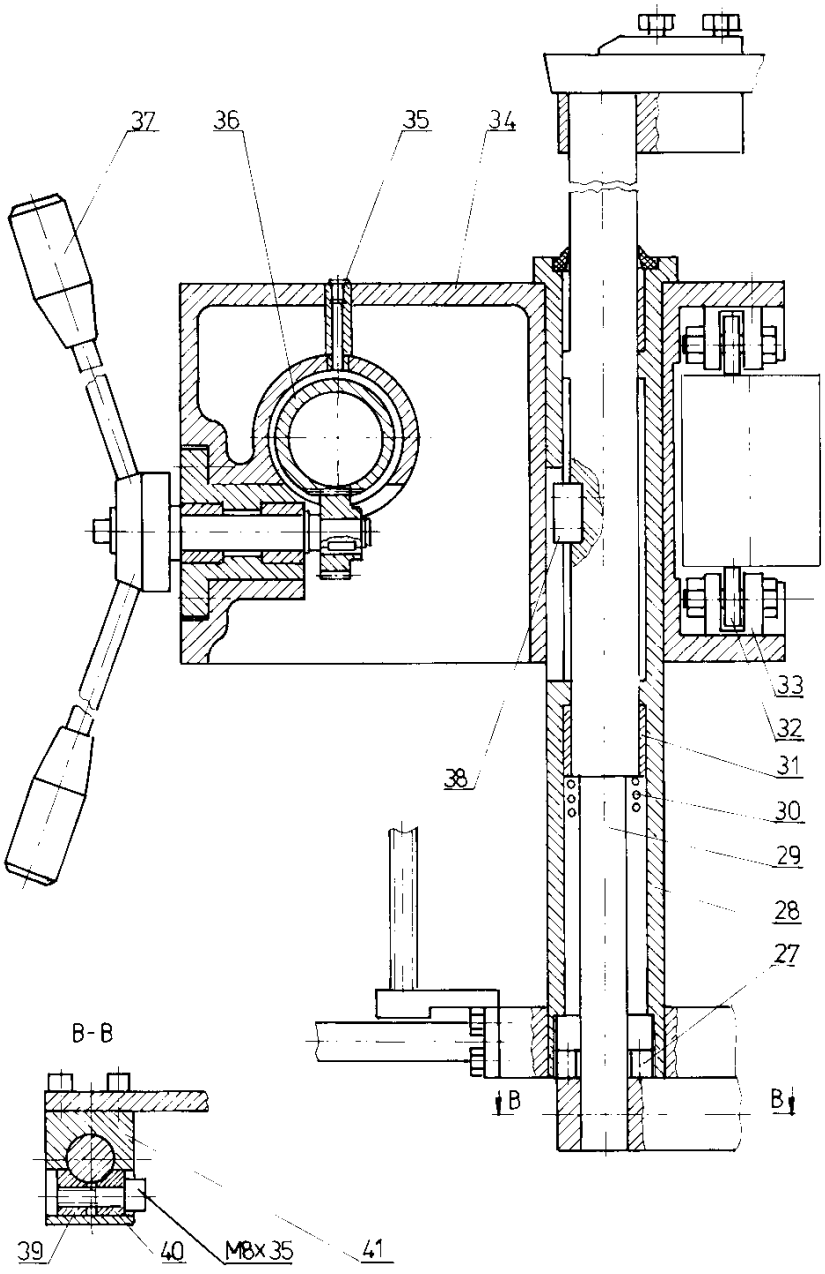


Fig.6

Fig. 7

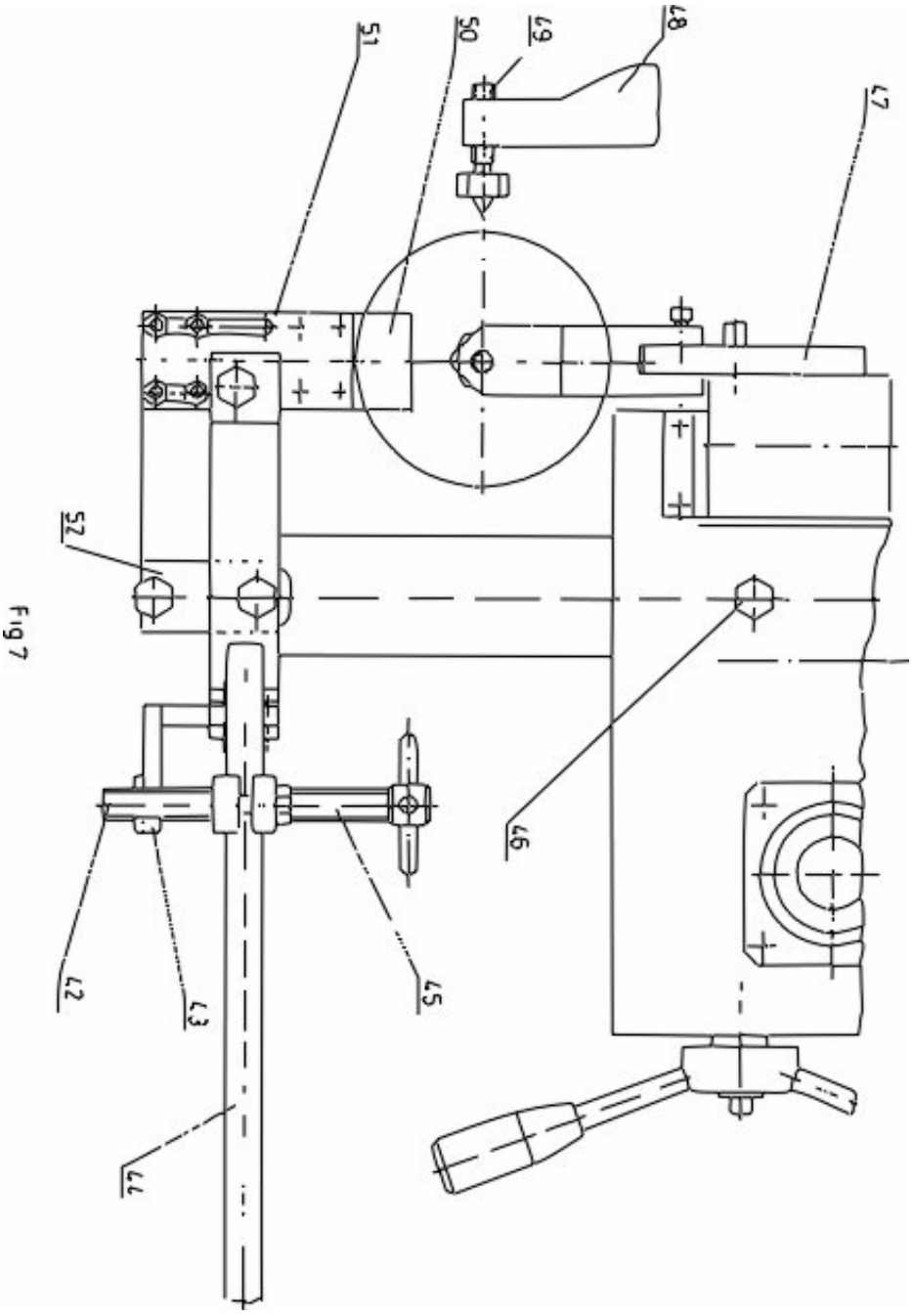


Fig 7

Fig. 8

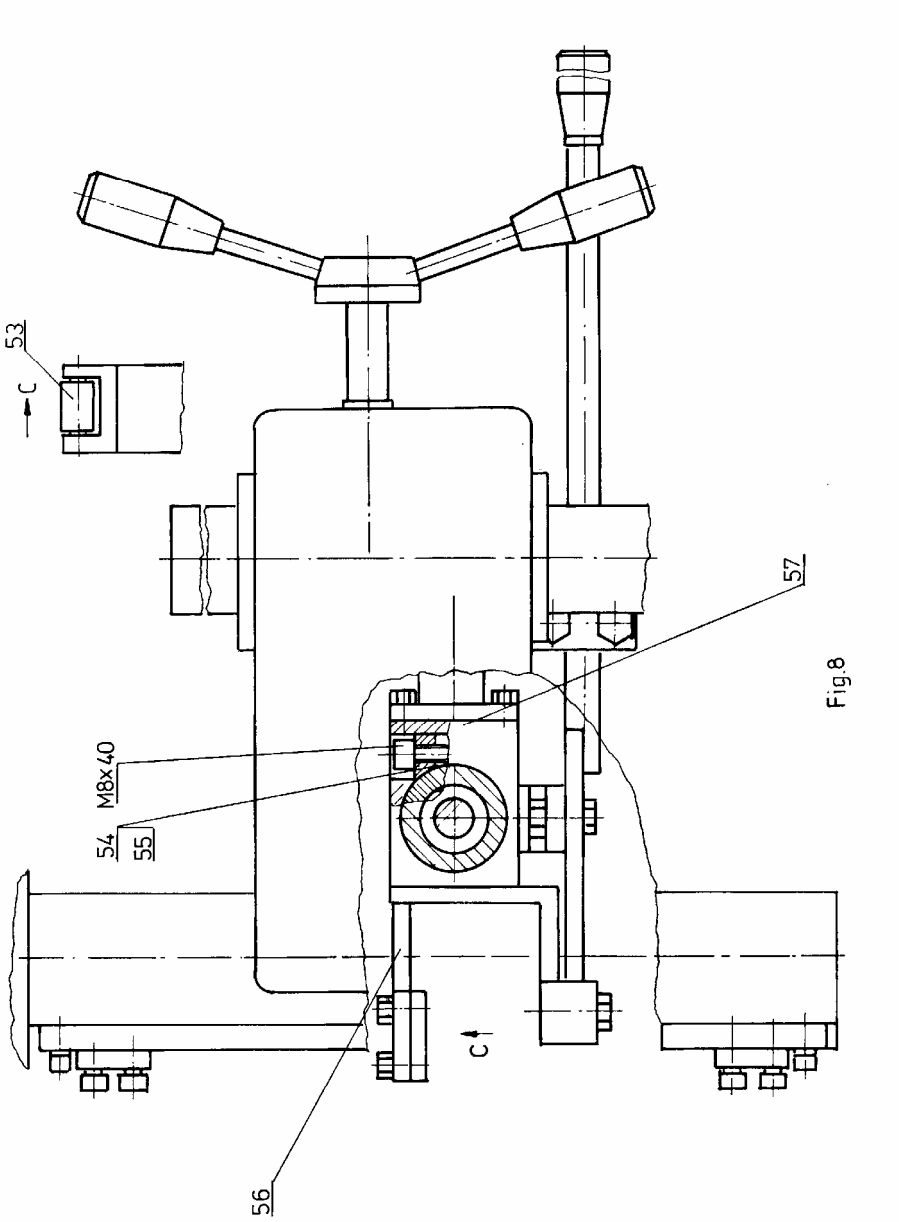
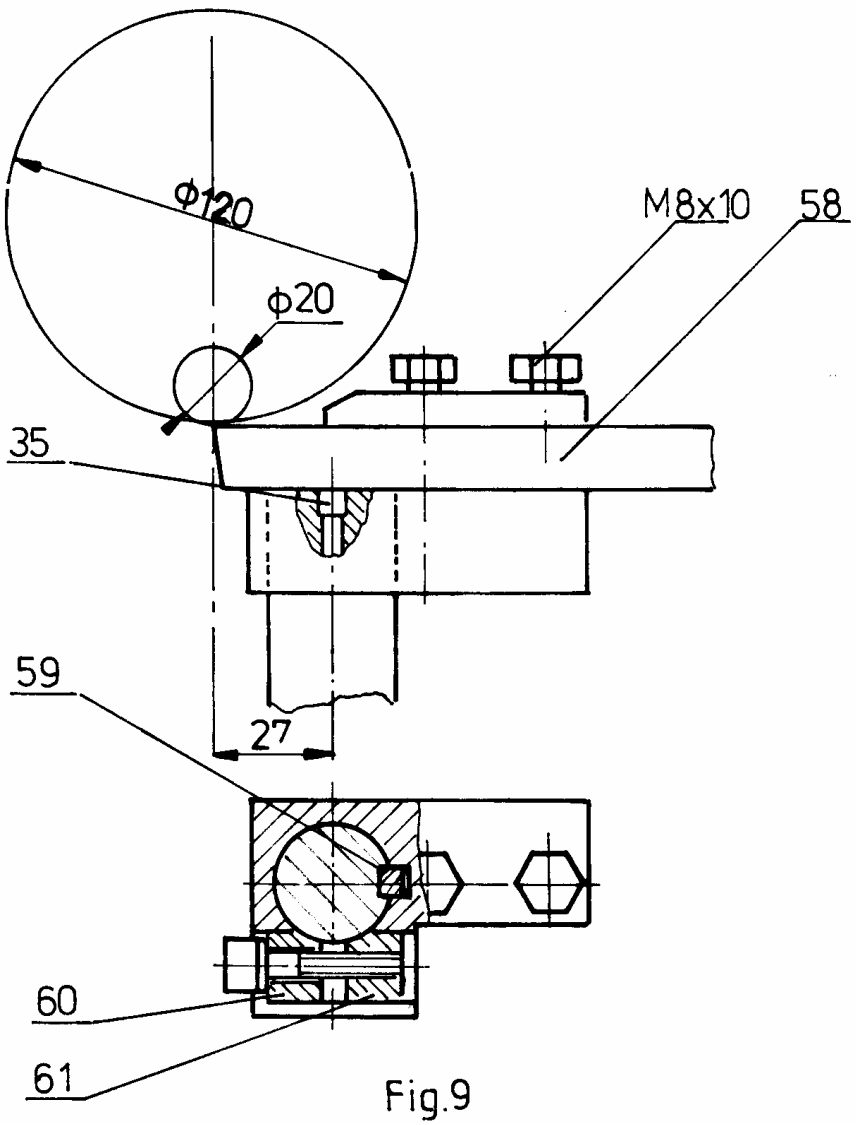


Fig. 9



CL1300-CL1500 Parts List

REF	PART#	DESCRIPTION
1	A001	stand
2	A002	rectangular guide
3	A003	round guide
4	A004	headstock
5	A005	nut
6	A006	bearing
7	A007	key
8	A008	spindle
9	A009	cover
10	A010	Φ8 spring washer
11	A011	m8x16 screw
12	A012	faceplate
13	A013	screw
14	A014	screw chuck
15	A015	screw
16	A016	bearing
17	A017	cover
18	A018	M4x16 screw
19	A019	pulley-A
20	A020	belt
21	A021	specail washer
22	A022	nut
23	A023	Φ10 spring washer
24	A024	M10x30 screw
25	A025	door
26	A026	knob
27	A027	turning plate
28	A028	M5 screw
29	A029	pin
30	A030	Φ5 spring washer
31	A031	M5x10 screw
32	A032	Φ8 spring washer
33	A033	m8x20 screw
34	A034	plate
35	A035	Φ6 spring washer
36	A036	M6x15 screw
37	A037	pin
38	A038	Φ12 washer
39	A039	ring
40	A040	plate
41	A041	Φ10 washer
42	A042	Φ10 spring washer

REF	PART#	DESCRIPTION
43	A043	M10x15 screw
44	A044	pin
45	A045	knob
46	A046	plate
47	A047	screw
48	A048	knob
49	A049	sleeve
50	A050	M10x30 screw
51	A051	knob
52	A052	Φ6 spring washer
53	A053	M6x20 screw
54	A054	plate
55	A055	Φ8 washer
56	A056	M8 nut
57	A057	M6 nut
58	A058	limited switch
59	A059	screw
60	A060	clamper
61	A061	cord
62	A062	cord
63	A063	motor
64	A064	key
65	A065	pulley-B
66	A066	specail washer
67	A067	specail washer
68	A068	Φ6 spring washer
69	A069	M6x20 nut
70	A070	Φ8 washer
71	A071	Φ8 spring washer
72	A072	M8x35 screw
73	A073	M4x10 screw
74	A074	wiring box
75	A075	screw
76	A076	screw
77	A077	AC contactor
78	A078	plate
79	A081	plate
80	A082	press key
81	A083	press key
82	A084	emergency-stop key

CL1300-CL1500 Parts List

REF	PART#	DESCRIPTION
83	A085	connect plate
84	A086	Φ8 washer
85	A087	Φ8 spring washer
86	A088	M8x50 screw
87	A089	clamper
88	A090	cord
89	A091	circle plate
90	A092	plate
91	A093	spring
92	A094	pin
93	A095	knob
94	A096	Φ5 spring washer
95	A097	M5x20 screw
96	A098	Φ8 spring washer
97	A099	M8x45 screw
98	A100	Φ8 washer
99	A101	Φ8 spring washer
100	A102	M8x15 screw
101	A103	support
102	A104	pan
103	A105	Φ6 washer
104	A106	Φ6 spring washer
105	A107	M6x20 screw
106	A108	M6 nut
107	A109	support plate
108	A110	Φ8 spring washer
109	A111	Φ8 spring washer
110	A112	M8x30 screw
111	A113	M8x20 screw
112	A114	Φ8 spring washer
113	A115	M8x20 screw
114	A116	Φ8 spring washer
115	A117	M8x60 screw
116	B001	feeder
117	B002	bearing support
118	B003	screw
119	B004	bearing
120	B005	Φ8 washer
121	B006	Φ8 spring washer
122	B007	M8 nut
123	B008	bearing support
124	B009	screw

REF	PART#	DESCRIPTION
125	B010	nolon box
126	B011	cover
127	B012	M5x12 screw
128	B013	plate
129	B014	rubber brush
130	B015	M5x15 screw
131	B016	Φ6 spring washer
132	B017	M6x12 screw
133	B018	grease hole
134	B019	bronze grease hole
135	B020	screw
136	B021	bronze box
137	B022	quill
138	B023	spring
139	B024	nut
140	B025	plunger
141	B026	key
142	B027	Φ5 spring washer
143	B028	M5x15 screw
144	B029	M8x35 screw
145	B030	Φ8 spring washer
146	B031	pin
147	B032	pin
148	B033	bushing
149	B034	scan pump
150	B035	knob
151	B036	pin
152	B037	knob
153	B038	scan feeder
154	B039	scan
155	B040	scan pole
156	B041	Φ4 washer
157	B042	M4x6 screw
158	B043	bushing
159	B044	console
160	B045	M6x15 screw
161	B046	Φ6 spring washer
162	B047	rod
163	B048	knob
164	B049	plate
165	B050	screw
166	B051	Φ6 spring washer

CL1300-CL1500 Parts List

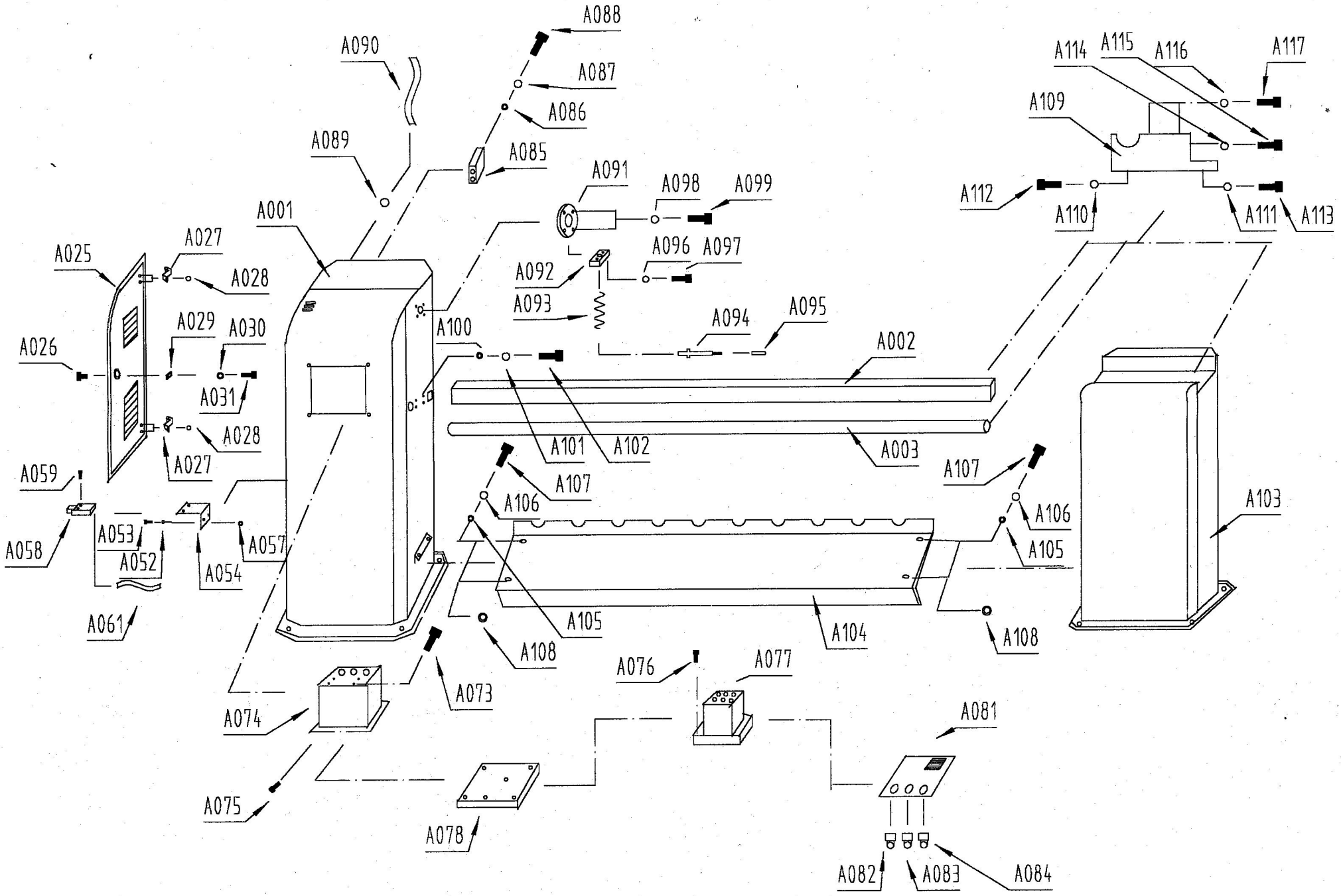
REF	PART#	DESCRIPTION
167	B052	M6x15 screw
168	B053	Φ8 washer
169	B054	Φ8spring washer
170	B055	M8 nut
171	B056	plate
172	B057	bow
173	B058	screw
174	B059	bronze box
175	B060	rob
176	B061	knob
177	B062	pin
178	B063	gear case
179	B064	Φ10 spring washer
180	B065	M10x40 screw
181	B066	screw
182	B067	gear
183	B068	rob
184	B069	bronze box
185	B070	gear
186	B071	ring
187	B072	key
188	B073	key
189	B074	pin
190	B075	bronze box
191	B076	rob
192	B077	gear
193	B078	bronze box
194	B079	ring
195	B080	key
196	B081	tuning cover
197	B082	washer
198	B083	Φ6 spring washer
199	B084	M6x15 screw
200	B085	cover
201	B086	M5x13 screw
202	B087	Φ8 sping washer
203	B088	M8x30 screw
204	B089	bushing
205	B090	kinf
206	B091	M8x12 screw
207	C001	template
208	C002	adjusting plate

REF	PART#	DESCRIPTION
209	C003	Φ6 spring washer
210	C004	m6x15 screw
211	C005	knob
212	C006	Φ6 washer
213	C007	m6x20 screw
214	C008	console
215	C009	console
216	C010	plate
217	C011	tip
218	C012	M10 nut
219	C013	Φ8 spring washer
220	C014	M8x20 screw
221	C015	Φ8 washer
222	C016	Φ8 spring washer
223	C017	M8x25 screw
224	D001	tool rest
225	D002	lock devise
226	D003	knob
227	D004	turning cover
228	D005	rob
229	D006	knob
230	D007	washer
231	D008	M6x12 screw
232	D009	lock plate
233	D010	Φ12 washer
234	D011	nut
235	D012	screw pole
236	D013	plate
237	D014	key
238	D015	eccentric rod
239	D016	clamp
240	D017	pin
241	E001	tailstock
242	E002	tailstock sleeve
243	E003	screw pole
244	E004	bearing
245	E005	ring
246	E006	cover
247	E007	M5x15screw
248	E008	handle wheel
249	E009	knob
250	E010	washer

CL1300-CL1500 Parts List

REF	PART#	DESCRIPTION
251	E011	konb
252	E012	moving plate-A
253	E013	M5x12 screw
254	E014	moving plate-B
255	E015	Φ8 spring washer
256	E016	M8x25 screw
257	E017	rob
258	E018	konb
259	E019	lock plate
260	E020	steady rest

REF	PART#	DESCRIPTION
261	E021	adjusting plate
262	E022	bearing
263	E023	Φ8 washer
264	E024	Φ8 spring washer
265	E025	M8 nut
266	E026	Φ10 washer
267	E027	Φ10 spring washer
268	E028	m10x30 screw
269	E029	screw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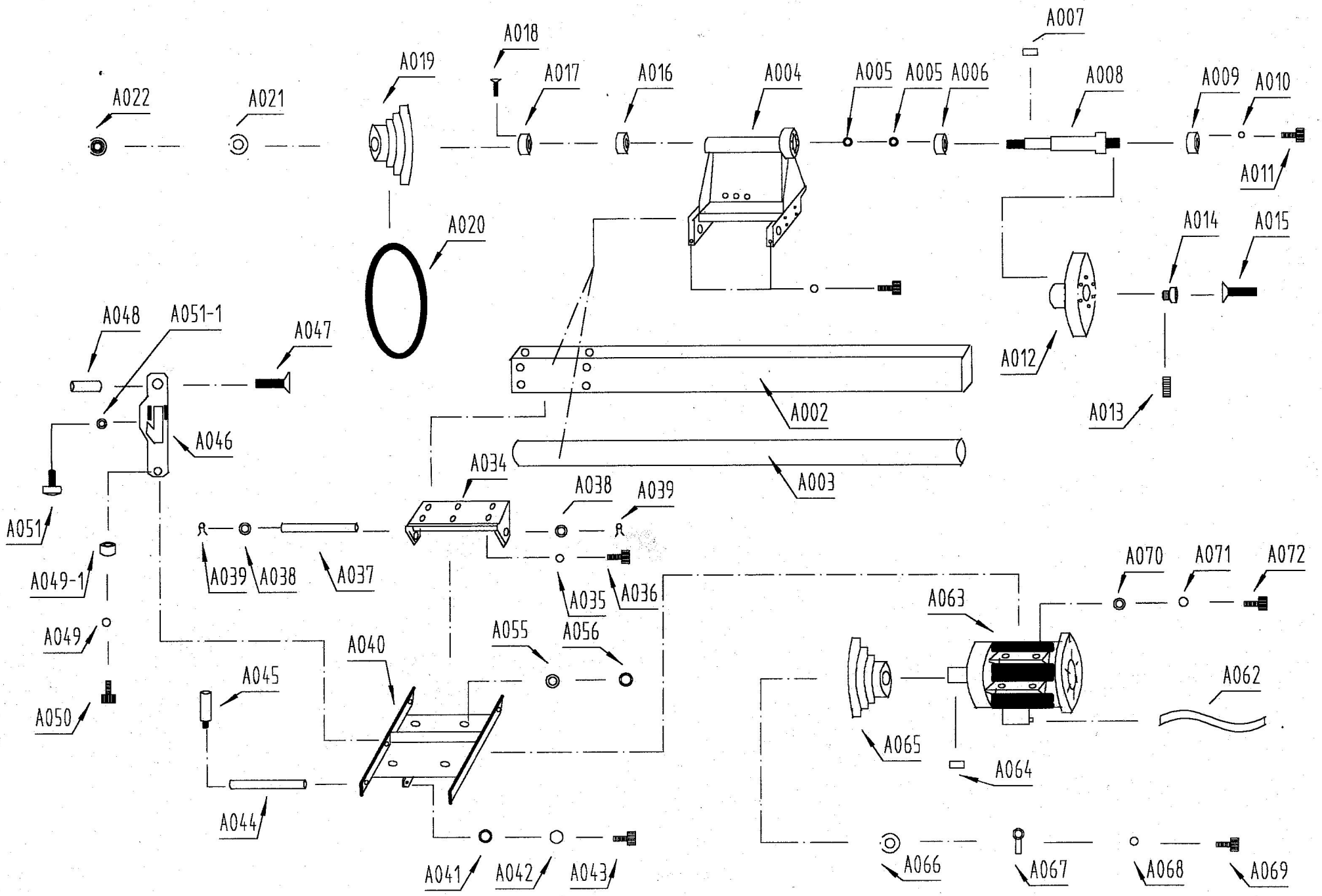
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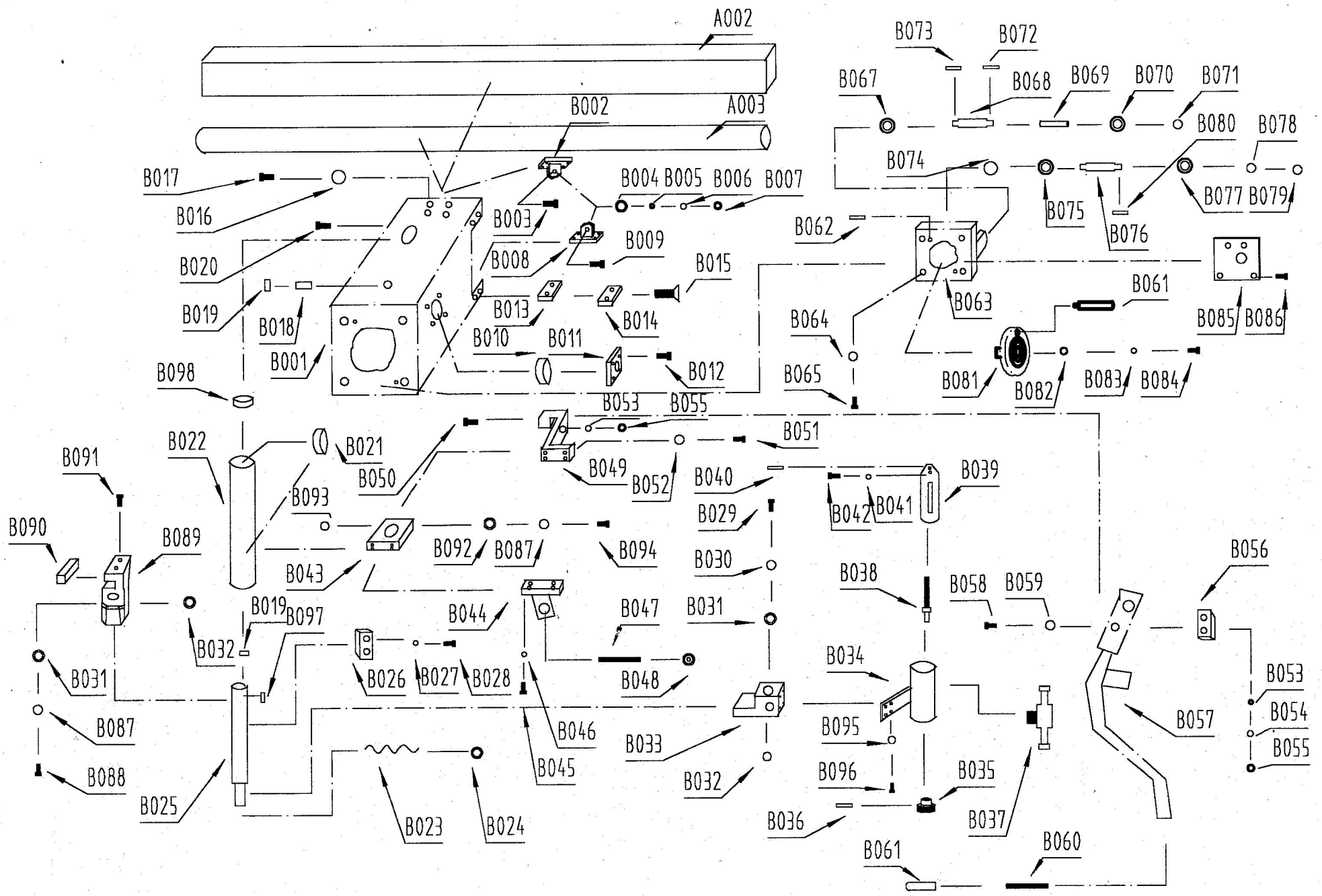
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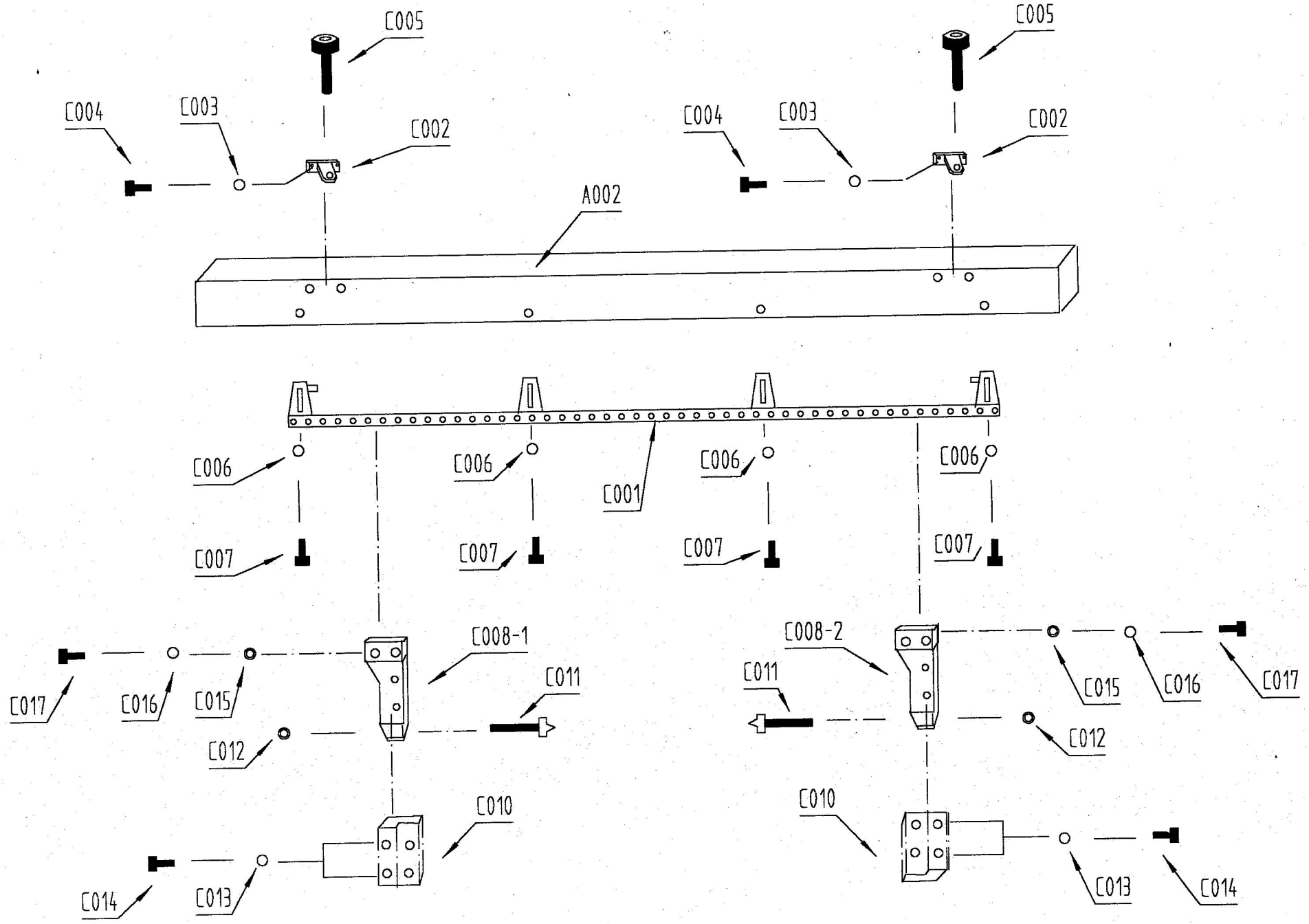
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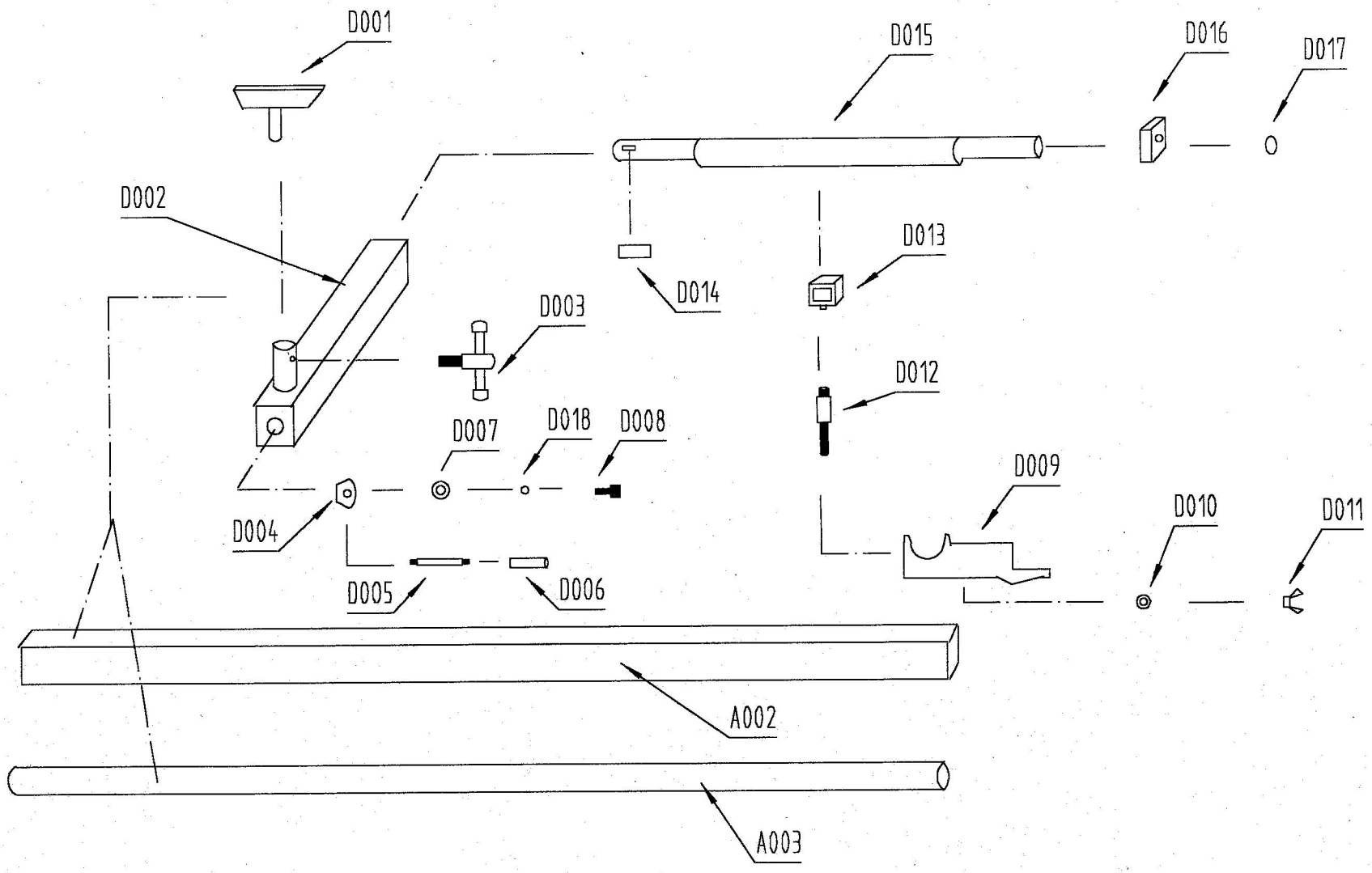
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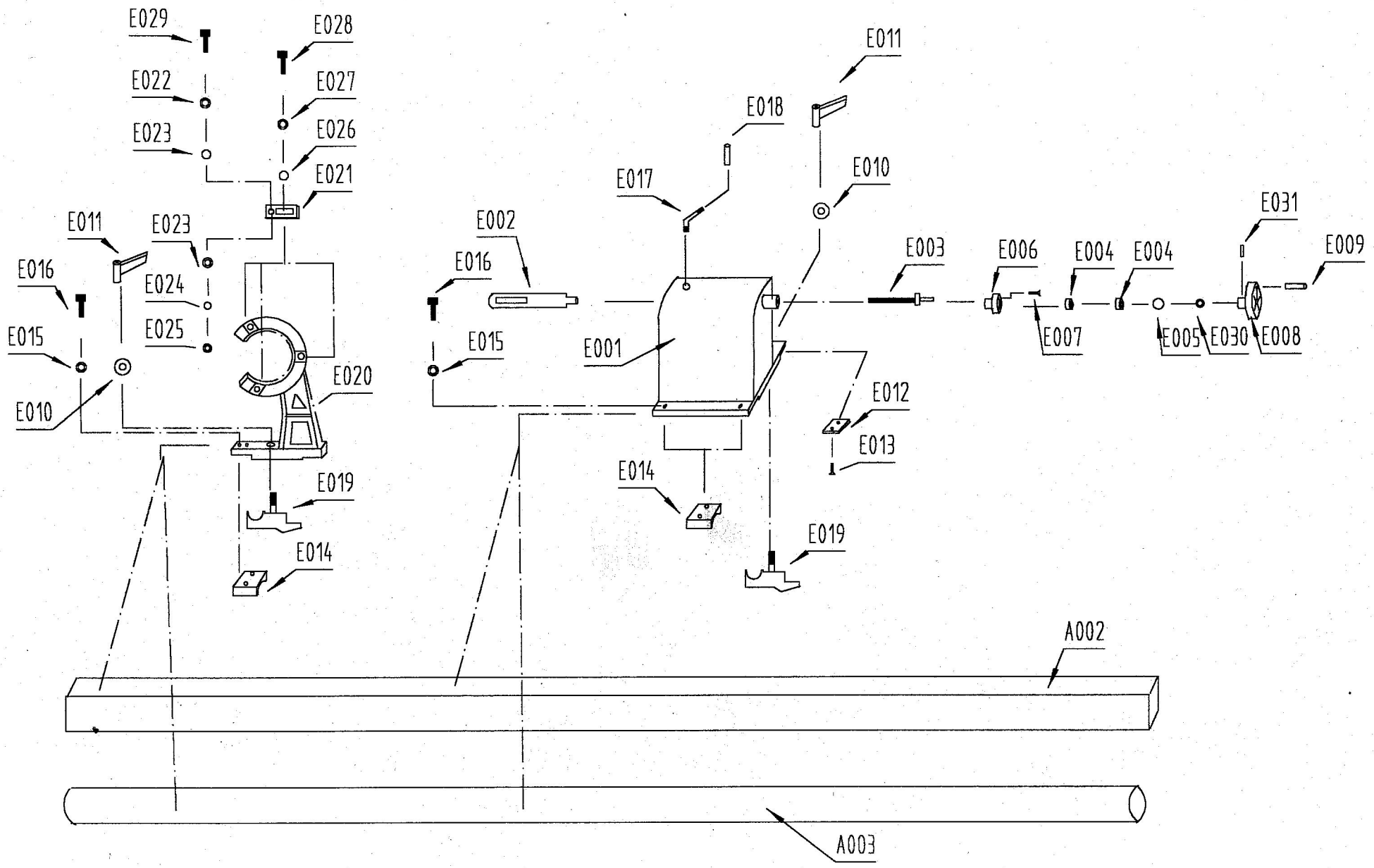
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